The role of bioenergy for energy objectives

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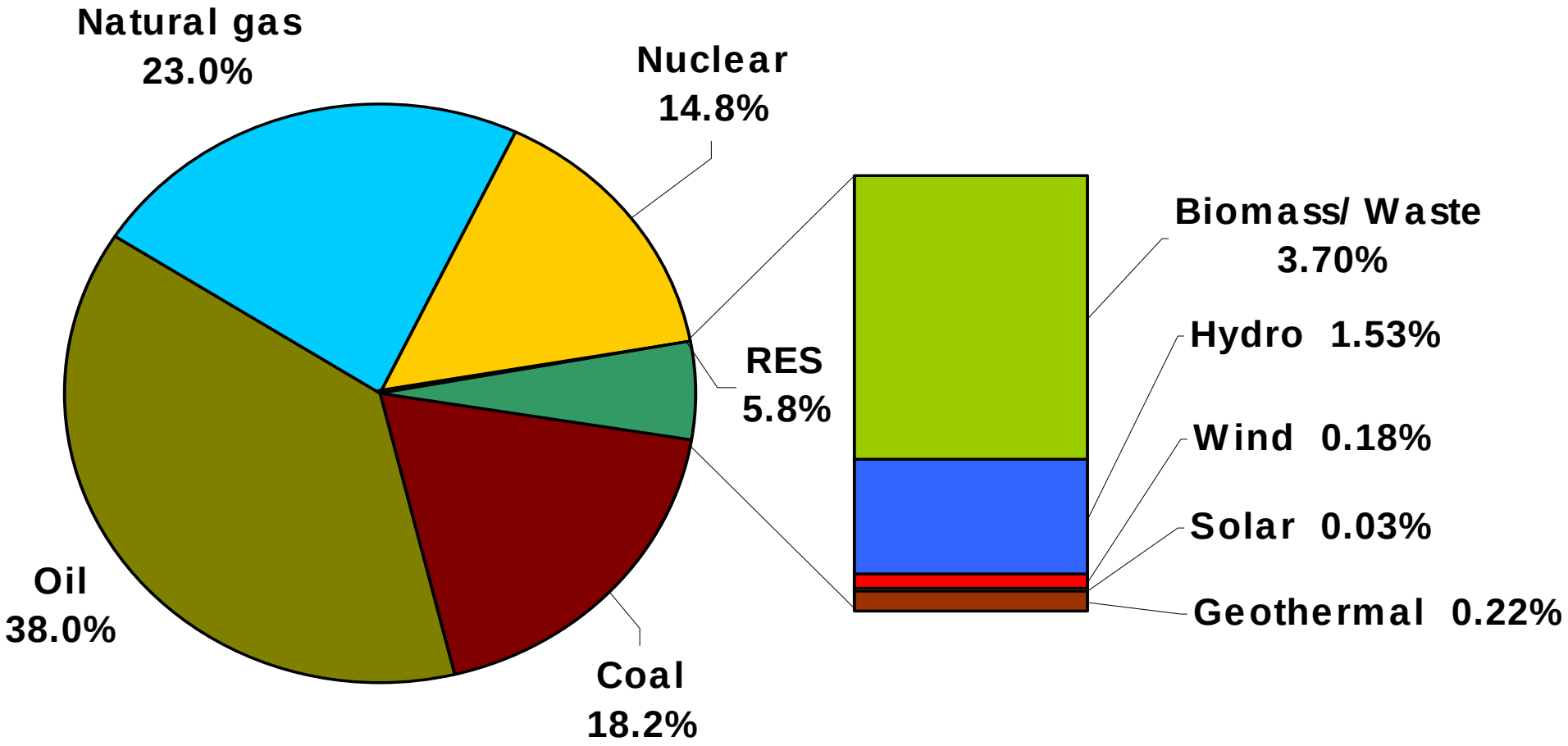
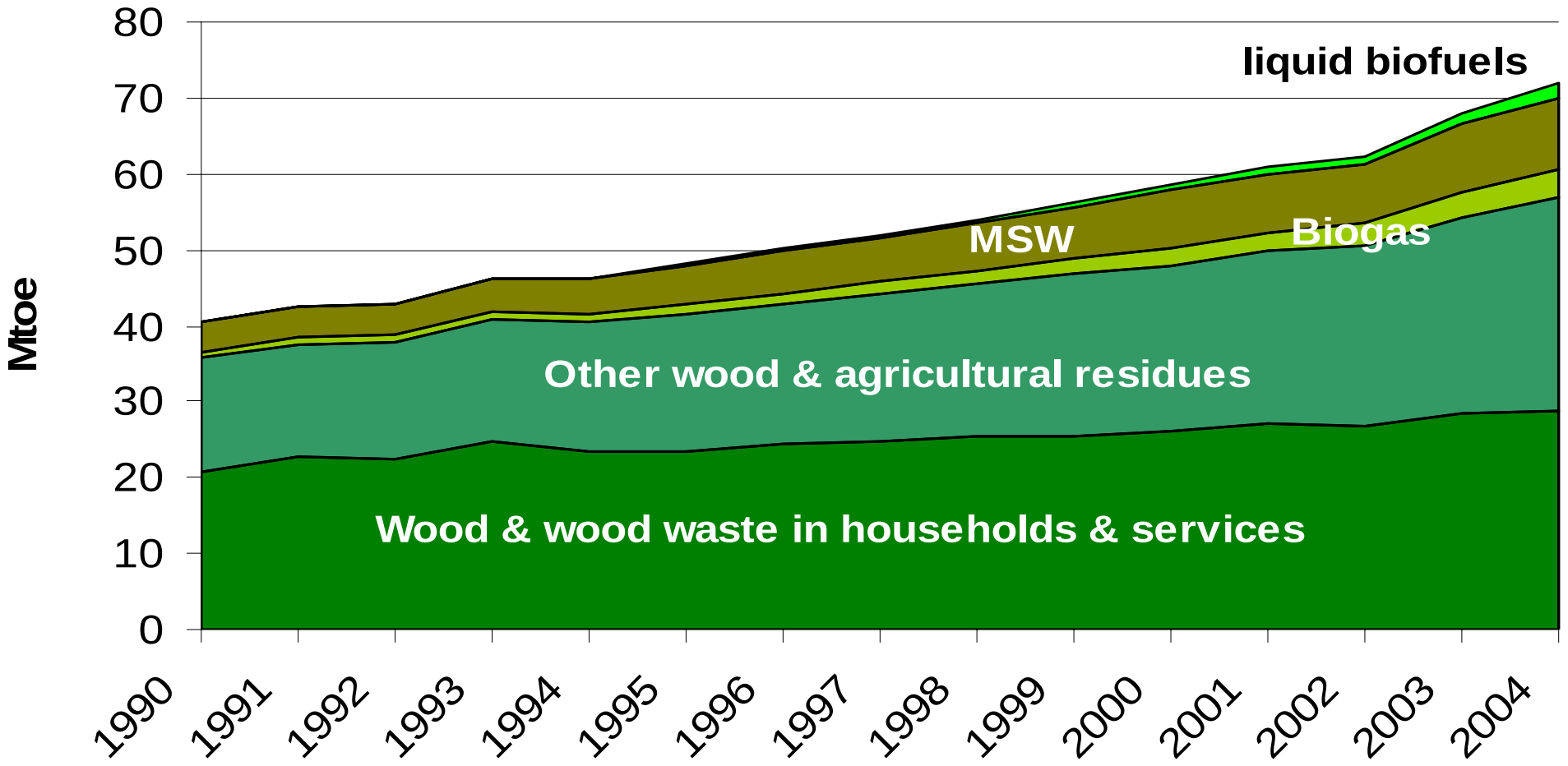
Gross energy consumption EU25, 2003



Bioenergy consumption EU25, 1990-2004



Source: EUROSTAT

Bioenergy; current global use and future potential

- **Current use: 50 EJ/a of 440 EJ/a total world energy consumption (2001)**
- **Future potential (EJ/a): up to 150-300**

	Year		
Scenario	**2025**	**2050**	**2100**
Shell (1996)	85	200 – 220	–
IPCC (1996)	72	280	320
Greenpeace (1993)	114	181	–
Johansson et al. (1993)	145	206	–
WEC (1993)	59	94 – 157	132–215
Dessus et al. (1992)	135	–	–
Lashof and Tirpak (1991)	130	215	–
Fischer and Schrattenholzer (2001)		350 – 450	–
Faaij (2006)		40-1100	

"Preliminary results indicate that significant biomass is available to support ambitious renewable energy targets in 2010, 2020 and 2030, even after taking environmental constraints into account."

EEA Study: How much biomass can Europe use without harming the environment?

Bioenergy; global, industrial and large scale

Forest products

Waste

Agricultural products

Industrial by-products

Heat

Electricity

Transport fuels

Conclusions

- There are few alternatives to bioenergy for governments with an objective to substantially increase the share of RES in short and medium term
- Low cost high volume woody biomass is the dominant feedstock today, and will probably continue to be so
- A successful and cost efficient expansion of bioenergy requires industrial scale operations and continued geographical separation of production and use. Such development offers opportunities for both producer and user regions